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The Use And Effectiveness Of Facilitated Communication For A Child With Autism

Danielle Gayton
Eastern Illinois University

THE USE AND EFFECTIVENESS OF FACILITATED COMMUNICATION FOR A CHILD WITH AUTISM

GAYTON

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The Use and Effectiveness of Facilitated Communication for a Child with Autism

(TITLE)

BY

DANIELLE GAYTON

THESIS

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Gail J. Richard
ADVISER

4-26-93
DATE

Robert M. Augustine
DEPARTMENT HEAD

The Use and Effectiveness of Facilitated Communication for a Child with Autism

Danielle Gayton

Eastern Illinois University

Department of Communication Disorders and Sciences

Committee Members

Gail J. Richard

Gail J. Richard, Ph.D.
Committee Chair

Robert M Augustine

Robert M. Augustine, Ph.D.
Committee Member

Charlotte A. Wasson

Charlotte A. Wasson, M.S.
Committee Member

Abstract

This individual case study investigated the use and effectiveness of Facilitated Communication with a seven year old male diagnosed with autism. Criterion-referenced data was used to indicate the use and effectiveness of Facilitated Communication based on the number of appropriate (i.e., meaningful) responses elicited from the subject during four phases of the study. Descriptive data was also recorded to indicate differences or changes in the use and/or effectiveness of Facilitated Communication. Based on the criterion levels achieved, Facilitated Communication was found to be an effective method of augmentative and alternative communication (AAC) for this child with autism. The descriptive data recorded indicated that the use of Facilitated Communication provided this child with additional benefits other than increased nonverbal communication (e.g., reduction in behavioral problems; increase in verbalization).

Dedication

This thesis is dedicated to Karl Lange, who was taught to effectively use the technique of Facilitated Communication. Facilitated Communication is special to Karl because it provides him with "a way to talk".

My hope and dream is for Karl to continue to use Facilitated Communication to "amaze" and "fascinate" others around him. I know my dream will come true!

Good luck and best wishes to my friend "KARL".

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Table of Contents

List of Tables

List of Figures

List of Appendices

Chapter 1

Review of Literature

In 1943 Leo Kanner, a prominent child psychiatrist from Johns Hopkins Hospital, described a new syndrome which he termed "early infantile autism". Descriptions of eleven children displaying the syndrome are found in his paper entitled "Autistic Disturbances of Affective Contact" (Kanner, 1943). Kanner described fifteen characteristics which he attributed to a diagnosis of this unique new syndrome. They were as follows:

1. An "inability to relate oneself to people and situations from the beginning of life" (Kanner, 1943, p. 242).

2. "Failure to assume an anticipatory posture prior to being lifted up" (Kanner, 1943, p. 242).

3. The intrusion of food. Children with autism wanted to be left alone and any disturbance was very disrupting.

4. The intrusion of loud noises and moving objects. Tricycles, vacuum cleaners, and egg beaters were a few objects that horrified children with autism and could trigger panic.

5. A display of extreme repetitious behaviors due to an obsessive desire to maintain sameness.

6. These children related well to objects as long as they had undisputed power and control over the objects.

7. Relations with people for these children were altogether different. Children with autism ignored people.

8. Kanner stated that all of his children had good cognitive potential.

9. Eight of these children were able to speak, but their speech was very limited. Immediate and delayed "echolalia", the repetition of previously heard utterances, were also used by some of the speaking children. Three of the children remained "mute" or unable to speak.

10. "Affirmation is indicated by literal repetition of a question" (Kanner, 1943, p. 243). These children were unable to understand and use the word "yes" appropriately.

11. The literal use of prepositions was also very common among these children.

12. Personal pronouns were simply repeated as they were heard. This caused the you/I pronominal reversal.

13. These children displayed excellent rote memories, but an inability to use language in any other way.

14. All of these children were physically normal.

15. All children "came from highly intelligent families" (Kanner, 1943, p. 248).

These fifteen characteristics described by Kanner in 1943 were the original characteristics for early infantile autism. Most of the characteristics continue to be significant today in the diagnosis of autism.

The Diagnostic and Statistical Manual of Mental Disorders, Third Edition-Revised (1987) provides criteria for the diagnosis of autism. The criteria delineate four major characteristics contributing to the syndrome of autism. These criterion areas are:

1. "Qualitative impairment in reciprocal social interaction;

2. Markedly restricted repertoire of activities and interests;

3. Qualitative impairment in verbal and nonverbal communication, and in imaginative activity; and

4. Onset during infancy or childhood" (p. 38-39).

The intelligence quotient of children continues to be an important indicator of prognosis within autism and future language development (Rutter, Greenfeld, & Lockyer, 1967; Rutter & Lockyer, 1967). Due to the absence of functional speech and the untestability of many of these children, an intelligence quotient may be obtained through the administration of performance tests rather than verbal tests. The results from this type of assessment provides a valid intelligence quotient that can predict the outcome of future language development. There is a high IQ group which includes nonverbal IQ scores of sixty to seventy and above and a low IQ group which includes nonverbal IQ scores of fifty to sixty and below (Furlong, 1988).

Rutter and Lockyer (1967) stated that three-fourths of all individuals with autism have an IQ below seventy. Out of twenty children with autism who were also nonverbal with intelligence quotients of fifty-

five and below, only one acquired some speech at age twelve. Among the nine children who had intelligence quotients above fifty-five, five developed speech.

The most inhibiting feature of autism is the third area-a significant deficit or absence of both nonverbal and verbal communication. This impairment in communication impacts the social interaction and repertoire of activities and interests in which individuals with autism participate. Individuals with autism are unable to appropriately communicate with others in their environment; therefore, their interactional skills are also limited. In other words, many activities and interests involve communication with others; limited communication limits interest and participation in different activities. As a result, one major characteristic of the deviant communication patterns within autism is abnormalities in pragmatics, "the function of words and gestures in social situations" (Powers, 1989, p. 20).

Abnormality in the production of speech is another characteristic of verbal communication deficits within autism. Variations in the suprasegmentals of speech

include differences in "volume, pitch, stress, rate, rhythm, and intonation (e.g., monotonous tone, question-like melody, or high pitch)" (American Psychiatric Association, 1987, p. 39).

Aberrations in semantics, "the ideas about objects and events in the world that are coded by language" are also common occurrences within autism (Bloom & Lahey, 1978, p. 291). Echolalia (i.e., the repetition of previously heard utterances), and frequent irrelevant remarks (e.g., talking about trains during a conversation on sports) are also observed (American Psychiatric Association, 1987).

Aberrations in syntax, "the ways in which units of meaning are combined with one another" (Bloom & Lahey, 1978, p. 15) are also present in the language of individuals with autism. Pronominal reversals, the use of "you" for "I" (e.g., "You got the ball" meaning "I got the ball.") are common occurrences (American Psychiatric Association, 1987).

Impairments in communication can cover a broad spectrum of severity within the syndrome of autism, ranging from mild to severe, and verbal to nonverbal

(Furlong, 1988). Individuals with autism may display adequate verbal output, and the ability to articulate and produce speech, but be limited by the extent to which speech and language is meaningful and functional to themselves and others within their environment.

A frequent nonpurposeful type of speech which occurs in autism is called echolalia, in which individuals with autism simply repeat a previously heard word or phrase. Wing (1971) stated that three-fourths of all individuals with autism use echolalia. While these individuals appear to be verbal, echolalia is not always meaningful or functional. It is an empty playback of language heard in the environment, without purpose or intent. Nonverbal communication may also be abnormal, marked by minimal or nonexistent demonstration of eye contact, facial expression, body posture, or gestures (American Psychiatric Association, 1987).

Some individuals with autism may not demonstrate any mode of communication, completely lacking in the use of babbling, facial expression, gesture, mime, or spoken language (American Psychiatric Association,

1987). Rimland (1964) stated that fifty percent of individuals with autism are mute or speak only a few times throughout a lifetime. These individuals require an alternative nonverbal method to help them communicate and interact with others within their environment. These alternative options are called augmentative and alternative communication (AAC) systems which "augment or replace speech with symbols in the visual-manual modalities, typically in the form of manual signs or graphic symbols" (Abrahamsen, Romski, & Sevcik, 1989, p. 476).

Several augmentative and alternative communication treatment approaches have been employed in attempts to improve communication skills for individuals with autism. These include the use of manual signs, graphic symbols, and more recently, Facilitated Communication.

A number of researchers have studied the effects of manual sign training on the communication skills of individuals with autism (Bonvillian & Nelson, 1976; Fulwiler & Fouts, 1976; Konstantareas, Webster, & Oxman, 1979; Layton, 1988; Miller & Miller, 1973; Rotholz, Berkowitz, & Burberry, 1989). The use of

graphic symbols was also studied in the literature to be used with individuals with autism (Abrahamsen et al., 1989; Ratusnik & Ratusnik, 1974; Rotholz, Berkowitz, & Burberry, 1989).

Most studies documented positive gains by individuals with autism in the area of communication. Bonvillian and Nelson (1976) were able to teach a subject a total of 56 different manual signs in which the child produced them correctly and spontaneously without the aid of the trainer. Rotholz, Berkowitz, and Burberry (1989) found that their subjects could successfully request items at a restaurant with the use of picture communication books, but were not successful when they used manual sign language. Konstantareas, Webster, and Oxman (1979) were able to elicit between 100 and 270 manual signs from four subjects in their study, however they were unable to promote verbal communication. Abrahamsen, Romski, and Sevcik (1989) were only able to elicit the use of one lexigram from the subject with autism in their study. The differences in the effects of treatment in these studies may be attributable to a variety of variables

in the research designs, such as the methods used and individual differences of the subjects diagnosed with autism. However, the evidence for success with the use of augmentative and alternative communication techniques by individuals with autism is fairly strong.

The most recent method of augmentative and alternative communication advocated for individuals with autism is "Facilitated Communication". Facilitated Communication, in its capitalized form, refers to a specific augmentative and alternative communication method. Facilitated Communication originated in Melbourne, Australia in 1977. The founder of this method was Rosemary Crossley, a Special Educator and Program Coordinator at the DEAL Communication Center in Melbourne. The method was originally used to aid the communicative abilities of individuals with cerebral palsy, but was later successfully used with individuals with autism. In 1989, Douglas Biklen, Ph. D., Director of Special Education at Syracuse University, visited Rosemary Crossley at the DEAL Communication Center and observed the use of Facilitated Communication by individuals

diagnosed with autism. Later that year, he introduced Facilitated Communication in the United States.

Facilitated Communication is defined as "an alternative means of communication in which students are given physical and emotional support to type on an electronic keyboard or point at letters on an alphabet board" (Biklen, 1990; Crossley, 1988 in Biklen & Schubert, 1991). An electronic device called a Canon Communicator or an alphabet board with the letters arranged in alphabetical order are used, although a typewriter or computer keyboard are acceptable alternatives.

The premise underlying the success of Facilitated Communication is that individuals with autism are suspected to have an apraxic, motor programming deficit which causes an inability or lack of verbal communication (Biklen, 1990; Crossley, 1988, and Oppenheim, 1974 in Biklen, 1992). Facilitated Communication is believed to enable individuals with autism to overcome these neuromotor difficulties. It is also thought to provide individuals with autism the confidence they appear to be lacking during

communicative activities.

This method is "appropriate for individuals who are not yet able to access a communication aid independently and meaningfully, but for whom meaningful/independent access is a realistic and desirable goal" (Crossley, 1988 in Biklen, 1992, p. 16). Individuals with autism who are high and low functioning, verbal and nonverbal alike have successfully used Facilitated Communication and are now communicating purposefully, many for the first time (Schubert, McSheehan, & Jorde, 1991). Some examples of the purposeful communication emerging from these individuals are:

1. "I not handicapped in my brain" (Schubert et al., 1991, p. 1).

2. A poem: "ME-I like to play....And have my way," Mark (Biklen and Schubert, 1991, p. 48).

3. "LET ME SHOW THEM WHAT I CAN REALLY DO" (Biklen, 1990, p. 300).

Educators advocating this method feel that the thinking and literacy skills of these individuals are finally being realized through the aid of Facilitated

Communication (Biklen & Schubert, 1991).

The key elements of the Facilitated Communication method are outlined in "New words: The communication of students with autism" (Biklen & Schubert, 1991). They are as follows:

1. Physical support. The facilitator provides physical support at the hand, wrist, forearm, elbow, or shoulder. The purpose of this support is to help isolate the index finger and/or decrease the rate of movement of the hand during selection of a letter or number on a keyboard. The physical support also helps individuals initiate a pointing response, as well as provide them with an emotional support system. "The facilitators do not aid the students in making a selection", they merely provide physical/emotional support (Biklen & Schubert, 1991, p. 46-47).

2. Initial training/introduction. Initial activities are provided in order for the individuals to experience some initial success with Facilitated Communication, for instance pointing to a picture when presented with a word. During this phase of training, the hand is pulled back prior to incorrect selections.

3. Maintain focus. The facilitator's job is to keep the individuals focused on what they are pointing at or typing. The individuals' eyes should be kept on the target stimuli; the electronic device or alphabet board should be in an easily accessible position; the index finger should remain isolated; and extraneous actions should be kept to a minimum. If the individuals display extraneous behaviors, these should be ignored and the individuals should be redirected. If the individuals engage in echolalia, facilitators should tell the individuals to type what they want to say.

4. Avoid testing for competence. The facilitator's job is to provide support for typing or pointing only; the facilitators are not to test these individual's competence. Facilitators should treat the individuals as capable communicators, and assume that the individuals have good receptive language skills, as well as the ability to associate sounds and symbols in a meaningful way. Still further, facilitators should use praise and other social reinforcers to encourage the student to communicate.

5. Set-work. Initially the individuals are not expected to openly converse in a dialogue. They are provided with activities which have more predictable answers, such as fill-in-the-blanks, math problems, or answers to questions based on materials read. Only after the "individuals have begun to develop fluency with facilitated communication should personal, open-ended communication be introduced and encouraged" (Biklen & Schubert, 1991, p. 47).

6. Fading physical support over time. The physical support may be faded back from the hand, to the wrist, to the forearm, to the elbow, to the shoulder and so forth. The fading of this support is based on the individual's needs. Some may need more support than others. The amount of time needed to fade back to other positions of support is also based on the individual's needs.

The use of Facilitated Communication with individuals with autism is increasing. In Illinois, there are several districts that are implementing the methodology. Two observations were made, one in a primary special education classroom (K. Alexander,

personal communication, March 24, 1992) and one in a high school special education classroom (T. Mahoney, personal communication, March 25, 1992).

Alexander and Mahoney (personal communication, March 24, 1992 and March 25, 1992) stated that prior to the use of Facilitated Communication all the students demonstrated good receptive language skills. The high school students had short attention spans and had not shown reading, spelling, or math skills.
Through the use of Facilitated Communication these students were found to possess the ability to associate sounds and symbols.

The levels of assistance given to the students varied according to their needs. Three students were facilitated at the hand, and one was facilitated at the forearm.

The questions asked of the students were always functional (relating to something or someone of importance to the individuals). They were also allowed to communicate on their own and say what they wanted without being asked questions. The students were observed initiating conversations and communicating

with each other using Facilitated Communication. For example, one student typed that she was not feeling well. Another student read the message and typed "I hope you feel better". A third student started a facilitated discussion about basketball. He expressed a liking for "Duke", and wanted Duke to win. The speech-language pathologist asked him what he wanted to bet regarding Duke winning the game, and he responded "ice cream".

The reported accounts and personal observations of the use of Facilitated Communication appear to suggest both positive and negative aspects for the individuals using the method. A positive aspect is that the method appears to ease frustration with speech and enables individuals with autism to better express themselves. Interactive communication with others has been facilitated through this technique. According to Alexander and Mahoney (personal communication, March 24, 1992 & March 25, 1992), stereotypical behaviors associated with autism have also been reduced with the use of this method.

A negative aspect of Facilitated Communication is that it may or may not be successful in augmenting the communication of all individuals with autism. It is also questionable whether these individuals can gain independence from the physical support provided with this method. There also appears to be variability in performance based on the differences in devices and facilitators, introducing an emotional support variable. One student preferred to use a picture of a Canon Communicator rather than the actual device. This student also seemed to perform better with some specific facilitators as opposed to others (K. Alexander, personal communication, March 24, 1992).

While articles and presentations have discussed the positive affects of Facilitated Communication (Biklen, 1990; Biklen & Schubert, 1991; Schubert et al., 1991), research generating evidence to support the use of Facilitated Communication as a method for improving the communication skills of individuals with autism is lacking. Additional research data is needed to validate the use and effectiveness of this technique within the population of individuals with autism.

Acquiring specific information regarding the variables which influence success or failure with Facilitated Communication would significantly assist specialists who address communication deficits within autism. Previous research has substantiated the use of sign language (Bonvillian & Nelson, 1976; Fulwiler & Fouts, 1976; Konstantareas et al., 1979; Layton, 1988; and Miller and Miller, 1973), communication boards (Abrahamsen et al., 1989; Rotholtz et al., 1989), and typed responses (Ratusnik & Ratusnik, 1974) with individuals with autism. Numerous variables impacted success or failure with these augmentative and alternative communication methodologies, such as cognitive level, verbal or nonverbal communication, and behavioral components. Therefore, it is important to further study the use of Facilitated Communication and its effectiveness on similar variables with individuals having autism.

The purpose of this individual case study is to investigate the effectiveness of the use of Facilitated Communication with a child with autism through the use of criterion-referenced data. The research question

posed is as follows:

Is Facilitated Communication an effective augmentative and alternative communication method for a seven year old male who is diagnosed with autism and is primarily nonverbal?

Chapter 2

Method

Subject

The subject of this research project was a seven year old male diagnosed with autism. At the initiation of this study he was unable to complete formal standardized language tests. Verbal and nonverbal language abilities were limited and he was unable to effectively communicate with others within his environment.

The subject is an only child who lives with his mother and father. He was in good health, but demonstrated delays in overall development including gross and fine motor movements. Hearing abilities were normal. The subject wears glasses to correct strabismus or drift in his right eye. Gross and fine motor movements were delayed.

The subject's formal education began in a preschool early intervention program, followed by placement in a primary level Trainable Mentally Handicapped classroom. In February 1992, the subject was mainstreamed into a regular kindergarten classroom.

He was currently enrolled in a regular first grade class. A one-to-one aide was assigned to work with him throughout the school day. He also received speech-language therapy, occupational therapy, and individual social skills training during school.

A measure of receptive language abilities could not be obtained due to the subject's inability to point to pictures without assistance. Attention was variable and unfocused. Expressive language abilities were also severely limited. Verbal responses usually consisted of two to three word imitated utterances. The use of verbal jargon was observed in spontaneous utterances. School personnel and parents concurred regarding the presence of a severe delay in both receptive and expressive language.

The subject was involved in intensive speech and language therapy prior to the initiation of this study without indication of improvement in expressive language abilities. Manual sign language was attempted with the subject, but he did not appear to be interested in learning this mode of communication. He did point to a modified picture board at home for

snack selection, and printed words at school for his schedule.

The subject displayed many of the typical characteristics associated with the syndrome of autism. The major behavioral components present in his autistic profile were as follows:

1. Eye contact was not maintained without a verbal prompt.

2. Vocal intensity was soft and breathy except when upset. Vocal intensity increased upon a verbal prompt.

3. Peer interaction was infrequent. Interactional utterances consisted primarily of imitated models.

4. Appropriate turn-taking skills were present during structured activities. Inappropriate behaviors, including screaming and attempted hitting of others occurred during role-playing and unstructured activities.

5. Anxiety was displayed toward new settings and auditory stimuli (especially music and loud noises). Anxious behaviors demonstrated included crying,

whining, and verbally perseverating on the vowel /a/ while covering his ears. Self-stimulation activities were also evidenced, including rocking back and forth.

6. Withdrawal and disinterest were displayed during group activities (e.g., picking at his socks and placing the shredded material in his mouth). Attention improved during interactions involving the subject's parents and other family members.

Parental permission to be part of the study (Appendix A) was obtained, as was permission by the school administrator to allow school personnel involvement (Appendix B). The research procedures were approved by the Eastern Illinois University's Grants and Research Committee for human subject research (Appendix C).

Equipment

Training sessions and activities involving Facilitated Communication were conducted at both the subject's home and school. The facilitated sessions and activities involved a variety of people as facilitators. The devices used to facilitate

communication in the school setting included an alphabet board (Xerox copy of a computer keyboard) (Appendix D), a Zeos Pocket PC with a digital display (Appendix E), and an Apple II computer keyboard. The devices used to facilitate communication at home included an identical letter board, the same Zeos Pocket PC, and a Smith Corona Memory Correct II electric typewriter.

Procedures

The technique of Facilitated Communication was introduced and taught by the experimenter to the subject's facilitators in a two hour group training session, outlined in Table 1. The training session included a definition of Facilitated Communication, a description of the method, training in how to use Facilitated Communication, the sequenced steps to begin using this method with the subject, the experimental phases included in this study, and the methods for data collection. The session outline was based on an actual training session conducted by experts in the area of Facilitated Communication (Kincaid, Klein, & Hill,

1992). Possible facilitators who attended the training session included the classroom teacher, the aide, the reading teacher, the speech-language pathologist, the occupational therapist, the autism consultant, and the parents.

Table 1. Outline of Facilitated Communication Training Session

A. Definition of Facilitated Communication
B. Examples of individuals using Facilitated Communication
C. Demonstration of method
    1. Explanation and demonstration
        a) support levels
        b) input
        c) tasks
    2. Practice facilitating
D. Experimental phases
E. Data collection
    1. Explanation
    2. Practice
F. Question/ Answer

(Kincaid et al., 1992)

The experimenter viewed six hours of videotape on the method and training of Facilitated Communication. She also reviewed Biklen, Crossley, and Schubert's literature on Facilitated Communication (Biklen, 1990; Biklen, 1992; Biklen & Schubert, 1991; Crossley, 1992;

& Schubert et al. 1991) and observed the use of this method with individuals with autism in a school setting.

Table 2. Experimental Phases of Facilitated Communication Study

PHASE	PROJECTED DATE	CRITERION LEVEL	ACTIVITY
I	Oct. 22- Nov. 22	60% accuracy appropriate responses	Set work- Table 3
II	Nov. 23- Dec. 23	60% accuracy appropriate responses	Task- Tables 3 and 4 Instructional and Functional Activities
III	Dec. 24- Jan. 3	70% accuracy appropriate responses	Task- Tables 3 and 4 Functional Activities
IV	Jan. 4- Feb. 28	70% accuracy appropriate responses	Task- Tables 3 and 4 Instructional and Functional Activities

The experimental procedure consisted of four phases which are summarized in Table 2. In Phase I, the subject was introduced to the method of Facilitated Communication. Sessions occurred for approximately five to fifteen minutes, three times a day at school

and two times a day at home Monday through Friday; and three times a day on Saturdays, Sundays, and holidays. The length and frequency of these sessions were increased or decreased based on the attention span and tolerance level of the subject. In Phases II, III, and IV the subject was facilitated during school (instructional) and home (functional) activities. Total duration of the experimental method was projected to be four months OR one month after a conversational level in the home and school settings was attained, whichever occurred first.

The initial Phase I sessions consisted of "set work", which is listed in Table 3. Phase I activities were arranged in a hierarchy from concrete (item 1) to abstract (item 10). The "set work" activities included "yes/no , true/false, multiple choice questions, word matching, fill-in-the-blanks, copy typing, labeling items or pictures, exercises with set answers, exercises with a limited range of answers, cloze exercises, completing common phrases and sentences, typing sentences in a set context, and answering questions" (Crossley, 1992, p. 2). Some examples of

set work are included in Appendix F. The subject was to achieve at least a sixty percent accuracy level of appropriate responses to the set work tasks listed in Table 3.

Table 3. Description of Set Work

1. Pointing task
2. True/ False
3. Yes/ No
4. Multiple choice
5. Matching
6. Labeling
7. Fill-in-the-blank
8. Copy typing
9. Completing the phrase, sentence
10. Exercises with set answers

Phase I was a training or "prephase" to the experiment in which the two facilitators eliciting the greatest number of appropriate responses were to be identified. The highest number of appropriate responses elicited by the two facilitators was used to calculate the percentage which then indicated achievement of the criteria levels for the different phases.

Table 4. Description of Additional Tasks

1. Spelling words
2. Math
3. Exercises with a limited range of answers
4. Typing sentences
5. Asking wh-questions
6. Answering wh-
7. Spontaneous comments
8. Conversation

Phase II initiated integration of "set work" tasks into instructional tasks in the school setting and functional activities in the home setting. Table 4 lists additional examples of tasks. The actual type of task was determined by the facilitator in the home and/or school, based on the activity at hand. Spontaneous comments were optimal for inclusion in this and the following phases of the study. The criterion level for Phase II was at least sixty percent accuracy level of appropriate responses elicited during school and home activities.

Phase III involved functional tasks completed at home. This period of the experimental project coincided with Christmas vacation. The subject was to achieve at least a seventy percent accuracy level of appropriate responses elicited during home activities.

Phase IV involved both instructional and functional tasks completed in the school and home environments. The subject was to achieve at least a seventy percent accuracy level of appropriate responses elicited during school and home activities.

Table 2 listed projected dates for the completion of Phases I, II, III, and IV. These dates were tentative and subject to change based on the percentage of accuracy of appropriate responses achieved by the subject. The specific criterion levels for each phase had to be met before the subject moved to the next phase of the study. If the subject met a criterion before the projected conclusion date of a phase, he progressed to the next phase. If he did not meet the criterion level of a particular phase by the designated date, it was to be extended until the criterion level was achieved.

Data collection cards (Appendix G) were used to specifically record the date, facilitator, activity, and the type and quantity of responses used by the subject. The cards indicated whether the subject's responses were appropriate, inappropriate, or that no response was given. An appropriate response was defined as any response which was meaningful, whether it was correct or incorrect according to the task or question at hand. An appropriate response could also be an unrelated comment or question that held meaning.

Examples of appropriate responses might be "yes" as an answer to "do birds fly?" or "I don't understand" or "I pizza" clarified by a follow-up question. An inappropriate response was defined as any response which was nonmeaningful (i.e., the meaning cannot be decifered by a follow-up question). Examples of inappropriate responses might be "6, 4, 10" as an answer to "do fish swim?" or "cow elf", or random typing. No response was defined as the subject typing nothing at all. At the end of each day the subject's responses were tallied to assess progress and verify whether or not the subject had met specific criterion levels for each phase of this study.

Two different tally marks were made on the data collection cards, one to indicate the subject's response as a Facilitated Communication typed response only, and the other to indicate the subject's response as a Facilitated Communication typed and verbalized response. This task, completed by the subject's facilitators, was done to indicate whether or not Facilitated Communication was an appropriate method of augmentative and alternative communication to use with

this child with autism.

All responses elicited from the subject during Phase I of this study were listed on a transcript (Appendix H). During Phases II, III, and IV, no less than two samples of the subject's responses per day were recorded on a transcript (Appendix I).

Facilitators had a variety of options for making requests of the subject. The types of input used could include: a) visual stimulus only, b) verbal stimulus only, or c) both visual and verbal stimuli. The type of stimuli used was to be determined by the facilitator.

The subject was taught to access the letter board, Zeos Pocket PC, typewriter and the computer keyboard through the use of Facilitated Communication. The choice of device was based on availability, as well as preference of the subject for the devices.

A variety of options were available in regard to the extent of physical assistance. Table 5 summarizes the possible levels of physical support. The amount and type of physical support given to the subject was determined by each individual facilitator, based on

the needs of the subject to succeed in communicating through the use of Facilitated Communication. The areas of support were set up in a hierarchy which varied from maximal physical support at the hand, to total absence of any physical support.

Table 5. Areas of Physical Support

1. Hand
2. Wrist
3. Forearm
4. Elbow
5. Shoulder
6. Other
7. None

A cumulative data collection sheet (Appendix J) was used by the facilitators to record pertinent information regarding the Facilitated Communication interaction. The information recorded included the date, time, facilitator's name and relationship, setting, activity, equipment used, area of physical support, type of task, type of input, response, and any additional comments. Key factors for data collection are summarized in Table 6. All of the data recorded on the data collection sheet, except the responses, were recorded as descriptive data. This data was then used

to indicate the significant differences and changes in the subject's success or failure in communicating through the method of Facilitated Communication.

The experimenter assisted the facilitators in implementing Facilitated Communication with the subject. Reliability was maintained by the experimenter visiting the school two days a week and the home setting one day a week to monitor progress of the subject, check conformity in recording responses among facilitators, and answer any questions.

The goals of this study were for the subject to meet the specified criterion levels for the four phases. The percentage of accuracy achieved by the subject was to support or disprove the effectiveness of Facilitated Communication in this child with autism. Additional data collected and charted as descriptive information suggested significant differences or influences in the variables listed in Table 6.

Table 6. Data Collection Key

FACILITATOR'S RELATIONSHIP:

CT- teacher
A- aide
E- experimenter
M- mother
F- father
O- other
S- SLP
OT- occupational therapist
AC- autism consultant
R- reading teacher

ACTIVITY:

TS-H- training session- home
TS-S- training session- school

SA- school activity
HA- home activity

AREA OF SUPPORT:

H- hand
W- wrist
F- forearm
E- elbow
S- shoulder
O- other
N- none

TASK:

PT- pointing task
TF- true/ false
YN- yes/ no
MC- multiple choice
M- matching
L- label
SW- spelling words
FIB- fill in the blank
MTH- math
CT- copy typing
CP- completing the phrase
CS- completing the sentence
ESA- exercises with set answers
ELRA- exercises with limited range of answers
TS- typing sentences
WH?ASK- asked a wh- question
WH?ANS- answered a wh- question

SETTING:

S- school
H- home
O- other

EQUIPMENT:

L- letterboard
Z- Zeos Pocket PC
T- typewriter
CP- computer
O- other

INPUT:

VS- visual
VB- verbal
B- both
O- other

RESPONSE:

AR- appropriate response
IR- inappropriate response
NR- no response

C- conversation
S- spontaneous speech

Chapter 3

Results

The purpose of this individual case study was to investigate the use and effectiveness of Facilitated Communication in a subject with autism through the use of criterion-referenced data. This study was comprised of four phases beginning on October 22, 1992 and ending on January 31, 1993.

Table 7. Projected and Actual Dates of Experimental Phases

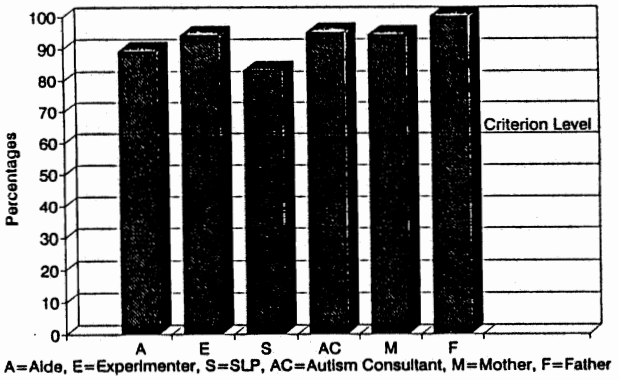
PHASE	PROJECTED DATE	ACTUAL DATE
I	Oct. 22- Nov. 22	Oct. 22- Nov. 5
II	Nov. 23- Dec. 23	Nov. 6- Dec. 23
III	Dec. 24- Jan. 3	Dec. 24- Jan. 3
IV	Jan. 4- Feb. 28	Jan. 4- Jan. 31

Phase I began as scheduled on October 22, 1992 but was completed prior to the projected date of November 22, 1992. The subject began Phase II on November 6, 1992, due to the attainment of appropriate typed responses

that averaged above the specified criterion level of 60% accuracy. Phase III progressed according to the specified time frame of December 24, 1992-January 3, 1993. Phase IV began as scheduled on January 4, 1993. The projected and actual dates of the four experimental phases are outlined in Table 7.

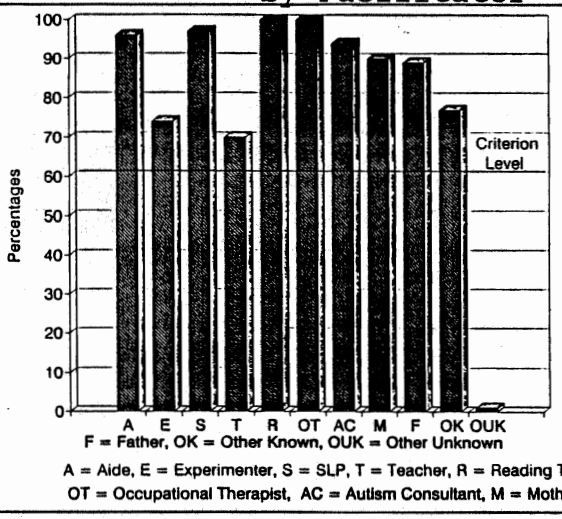
The results obtained for Phase I are illustrated by the bar graph shown in Figure 1. The subject displayed the ability to facilitate with 82-100% accuracy with six facilitators. The subject exceeded the 60% accuracy criterion level established for this phase of the study.

Figure 1. Phase I Average of Appropriate Responses by Facilitator



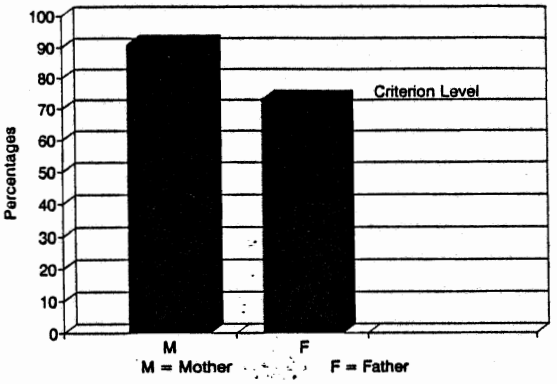
Results for Phase II are illustrated in the bar graph shown in Figure 2. The graph illustrates that the subject was able to facilitate with 77-100% accuracy with ten known facilitators and 0% with an unknown facilitator. The subject again exceeded the 60% accuracy criterion level which was established for Phase II.

Figure 2. Phase II Average of Appropriate Responses by Facilitator



The bar graph summarizing results for Phase III is shown in Figure 3. The graph illustrates the subject's ability to facilitate with 72-91% accuracy with two facilitators. The subject exceeded the 70% accuracy criterion level which was established for Phase III.

Figure 3. Phase III Average of Appropriate Responses by Facilitator



Phase IV results are illustrated in the bar graph shown in Figure 4. The subject was able to facilitate with 84-100% accuracy with six facilitators. Again, the subject exceeded the specified 70% accuracy criterion level.

Figure 4. Phase IV Average of Appropriate Responses by Facilitator

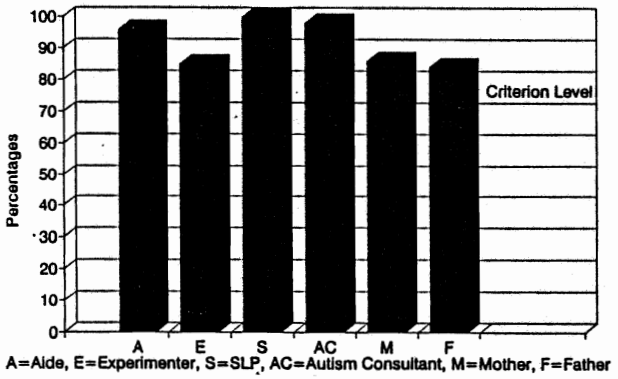


Table 8 summarizes each facilitator's average of appropriate responses for each of the four phases. Results indicate that the subject exceeded the specified criterion level for all phases of the experiment.

Table 8. Average Percentage of Appropriate Responses by Phase

	I	II	III	IV
Criterion	60%	60%	70%	70%
Aide	89%	95%	-	96%
Experimenter	95%	73%	-	85%
SLP	82%	96%	-	100%
Autism Cons.	96%	93%	-	98%
Teacher	-	70%	-	-
OT	-	100%	-	-
Reading T.	-	100%	-	-
Mother	95%	90%	91%	88%
Father	100%	89%	72%	84%

Figures 5 and 6 illustrate two line graphs, one for the subject's mother and one for the subject's aide, which show the daily facilitation results for Phase IV. These graphs show the consistency of the subject's appropriate responses with each facilitator.

Figure 5. Phase IV Daily Average of Appropriate Responses with Mother

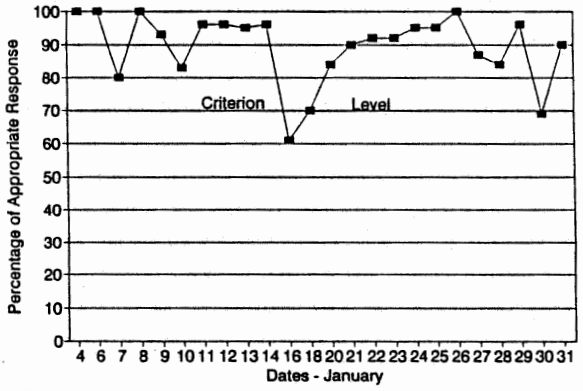
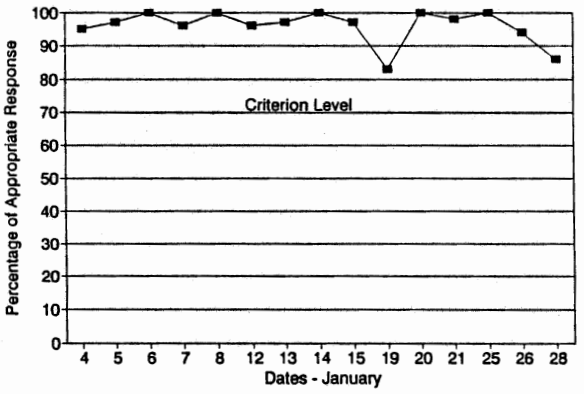


Figure 6. Phase IV Daily Average of Appropriate Responses with Aide



The subject was able to be facilitated with all of the individuals included in Table 6, as well as with a person he knew only as an acquaintance. He did not facilitate with a person who was a stranger to him.

This was the only preference that was shown in the descriptive variables outlined in Table 6. The subject was also able to be facilitated during activities across a variety of settings (e.g., ordering pizza at Pizza Hut).

The devices used for facilitating communication included all of the devices listed in Table 6, and were extended to include a laptop computer keyboard. The area of support used with the subject began at the hand and then was faded back to the wrist, the forearm, and then to the elbow. Light to firm support was used, based on the subject's attention and focus on the keyboard and the task at hand.

The subject was able to complete all of the tasks listed in Table 6, which included answering conversational questions. He attained a conversational level during Phase II of this study.

The input used included visual stimuli alone, verbal stimuli alone, or both visual and verbal stimuli. Use of the visual alone modality demonstrated the subject's ability to read. The subject's comprehension of material was then verified by verbally

asked questions. This study found that the subject did not need both modalities at one time, i.e., one modality provided sufficient information to complete the task.

The use of Facilitated Communication enabled this subject to effectively communicate with others by typing responses, as shown by the results illustrated in Figures 1-6 and Table 8. Facilitated Communication proved to have some additional benefits for this subject. These will be discussed in chapter 4.

The research question posed at the beginning of this study was:

Is Facilitated Communication an effective augmentative and alternative communication method for a seven year old male who is diagnosed with autism and is primarily nonverbal?

Based on this individual case study, using criterion-referenced data, Facilitated Communication is an effective augmentative and alternative communication method for this seven year old male who is diagnosed with autism and is primarily nonverbal.

Chapter 4

Discussion

The use and effectiveness of Facilitated Communication in a subject with autism was the focus of this individual case study. The results summarized in Chapter 3 illustrated this subject's ability to effectively develop and use the augmentative and alternative communication (AAC) method of Facilitated Communication.

Previous results demonstrated the percentage of the subject's responses which were appropriate (i.e., meaningful). Inappropriate (i.e., nonmeaningful) responses and occasional incidence of no response appeared to be attributable to the following five factors:

1) The subject's misunderstanding of a question due to complex wording;

2) The level of difficulty in the tasks and/or question requested of the subject;

3) The complexity of the typed response;

4) The physical health status of the subject (i.e., sick and/or tired);

5) The subject's inattention or lack of focus on the keyboard and/or the task at hand.

The study also demonstrated that this subject was able to generalize the use of Facilitated Communication to different settings, across known facilitators while using different devices. This was not expected due to the stereotypic rituals common in individuals with autism. This generalization may have been facilitated by introducing Facilitated Communication with a variety of facilitators and devices in both the school and home setting from the initiation of the study.

Table 9. Additional Benefits of Facilitated Communication for This Individual

1. Increase in verbal communication
2. Decrease in inappropriate behavior
3. Increase in social interaction
4. Increase in academic performance
5. Increase in attention span
6. Increase in expression of humor and emotions
7. Improvement in fine motor skills

The use of Facilitated Communication proved to have seven additional benefits for this subject, which are outlined in Table 9. They were as follows:

1. The subject's verbal communication increased. For example, he became able to verbalize his need to

use the bathroom by saying "bathroom".

2. Inappropriate behaviors displayed by the subject have decreased. Tantrums have become less frequent, and he transitioned into changes in the environment more easily.

3. Social interactions with others have increased. The subject stopped retreating from social situations, and began socially interacting with others.

4. The subject's academic performance has increased. His academic potential has been realized. He was now able to achieve and receive grades as other students receive them.

5. Attention the subject gave tasks increased. Attention on task improved to 40 minutes.

6. The expression of both humor and emotions has increased in this subject. For example, when the subject was asked to name a natural gas, he typed "fart"; when he was mad at his aide, he typed "asssh" (asshole).

7. There has also been an improvement in the subject's fine motor skills. This was evidenced by the subject's use of writing instruments.

Critical variables which seemed to be related to the success of Facilitated Communication with this subject are outlined in Table 10. They were as follows:

1. A period of "set work" was important to establish comfort levels. Both the subject and the facilitators needed to feel comfortable with the method of Facilitated Communication.

2. Appropriate, inappropriate, and no responses were charted to clarify the need for adjustments. The greater the percentage of appropriate responses, the more effective Facilitated Communication was for the subject.

3. The subject was introduced and encouraged to use multiple devices for facilitation. This was important to ease generalization of the use of Facilitated Communication.

4. Multiple facilitators were introduced to the subject early. This was important to ease generalization of the use of Facilitated Communication.

5. Facilitation was conducted in multiple settings. This was important to ease generalization of

the use of Facilitated Communication.

6. The subject's attention was focused on the task. Eye contact was essential to increase accuracy of the pointing response.

7. Individuals always assumed the subject was competent. The emotional support was important for Facilitated Communication to be effective. The facilitators believed in and supported the subject's use of Facilitated Communication.

8. The physical support provided by the facilitator was faded over time. It was important to promote independence from the physical support provided by the facilitator.

9. Other aspects of communication and behavior were monitored for changes (e.g., verbal/nonverbal communication and inappropriate tantrumming).

10. Other variables which affected effective facilitation were also monitored. These variables are listed in Table 6.

The ten critical variables identified for this subject were evaluated and monitored during the use of Facilitated Communication to promote and evaluate its

effectiveness as an augmentative and alternative communication (AAC) method to use with this individual with autism. However, these variables and results may not generalize to all individuals with autism.

Table 10. Critical Variables in Success with Facilitated Communication for This Individual

1. Period of "set work" to establish comfort levels.
2. Charting AR, IR, and NR to clarify need for adjustments.
3. Introducing multiple devices for facilitation.
4. Introducing multiple facilitators early.
5. Using facilitation in multiple settings.
6. Focusing attention on task.
7. Assume competency.
8. Fading physical support over time.
9. Monitoring other aspects of communication and behavior.
10. Monitoring other variables which affect effective facilitation.

In conclusion, the use of Facilitated Communication revealed the subject to be an intelligent, real little boy underneath the autism, a boy who has the ability to speak, who can socially interact with others, who is highly intelligent, and who has the ability to express both humor and emotions in appropriate situations. All of these skills were

found through the use of Facilitated Communication. For example, when the subject's mother overcooked dinner, he typed "why did you burn the food?"; and when he awoke in the middle of the night he typed he had a "sleep dream" indicating he had a nightmare. The above examples were real child responses from a real child who happens to be diagnosed with autism.

Facilitated Communication has proved to be an effective augmentative and alternative communication (AAC) method for this subject diagnosed with autism. Future studies on Facilitated Communication should address the following:

1. Replication of this study to determine if Facilitated Communication is an effective augmentative and alternative communication system to use with other individuals with autism.

2. Replication of this study with individuals diagnosed with expressive language disorders, e.g., oral apraxia and cerebral palsy.

3. A research study to support or refute the identified critical variables contributing to the success with Facilitated Communication.

4. A research study to investigate the identified additional benefits of Facilitated Communication.

5. A research study to compare and contrast the use and effectiveness of the augmentative and alternative communication (AAC) methods of sign language, graphic symbols and Facilitated Communication.

6. A research study to investigate the role of the facilitator in the effectiveness of Facilitated Communication.

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Appendix A

Parental Permission

I grant permission for my child, _____, to participate in the research study, "Facilitated Communication" conducted by Danielle Gayton, graduate student in the Department of Communication Disorders and Sciences, Eastern Illinois University, Charleston, Illinois.

_____
Parent Signature

_____
Child's Date of Birth

_____
Today's Date

_____
Address

_____
City, State ZIP

_____
Phone

Return to:

Danielle Gayton, B. S.
EIU Speech-Language-Hearing Clinic
7th and Hayes Streets
Charleston, IL. 61920

Appendix B

Administrator Permission

I _____, grant permission for _____'s instructional and support staff in cooperation with Danielle Gayton, graduate student in the Department of Communication Disorders and Sciences, Eastern Illinois University, Charleston, Illinois, to participate in the research study, "Facilitated Communication".

_____
Administrator's Signature

_____
Today's Date

_____
Address

_____
City, State ZIP

_____
Phone

Return to:

Danielle Gayton, B. S.
EIU Speech-Language-Hearing Clinic
7th and Hayes Streets
Charleston, IL. 61920

Appendix C

Human Subject Research Approval

Memorandum

To: Bob Augustine, Chair of CDS

Gail Richard, Department of CDS and Chair of Danielle Gayton's Committee

✓ Danielle Gayton, CDS graduate student and researcher

From: Bud May, Director of Grants and Research Bud

Date: October 8, 1992

Re: IRB approval of Gayton's research

****

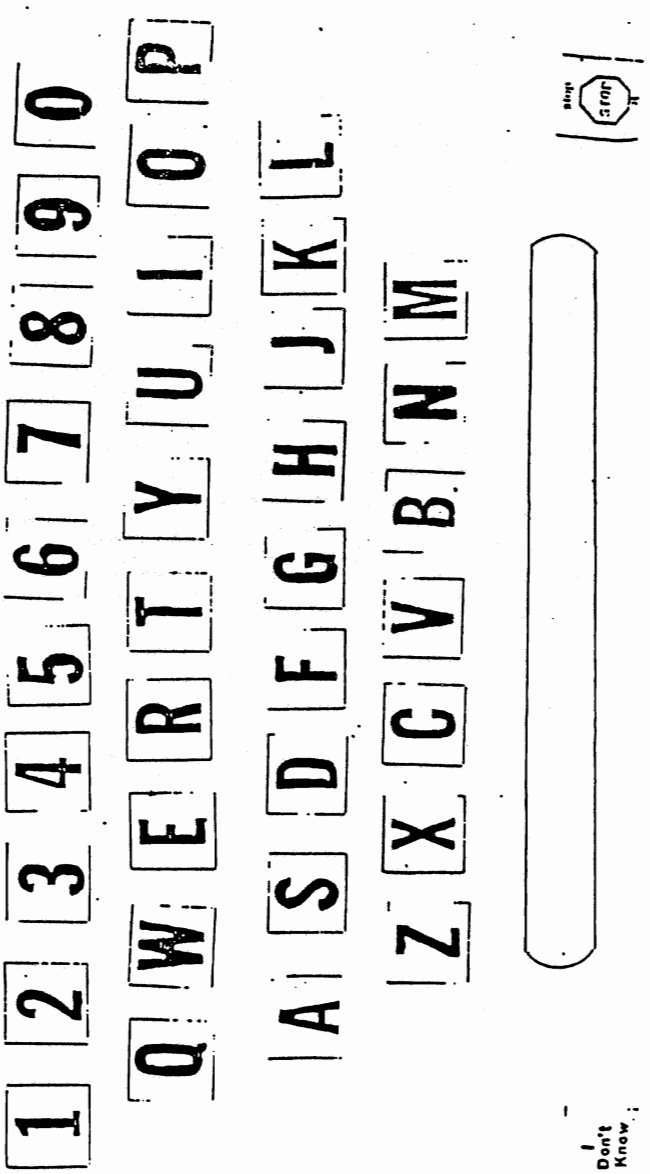
Thank you very much for referring Danielle Gayton's research to the Institutional Review Board. The project has been approved.

Please feel free to proceed. We hope your research is successful.

m

Appendix D

Letterboard



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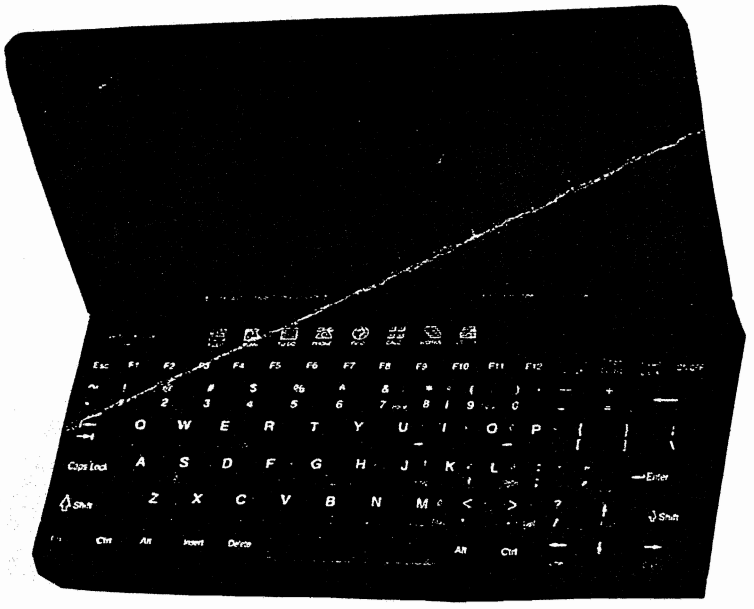
Appendix E

Zeos Pocket PC



Appendix F

Set Work Examples

Listen to these questions and indicate Yes or No.

1) Do fish swim?
2) Do dogs quack?
3) Do scissors cut?
4) Is ice hot?

Fill in the missing letters. There may be several possible answers.

1) DO_.
2) C_T.
3) _EE.
4) EN_.

Add.

1) 5
   + 2

2) 3
   + 1

Subtract.

1) 6
   - 2

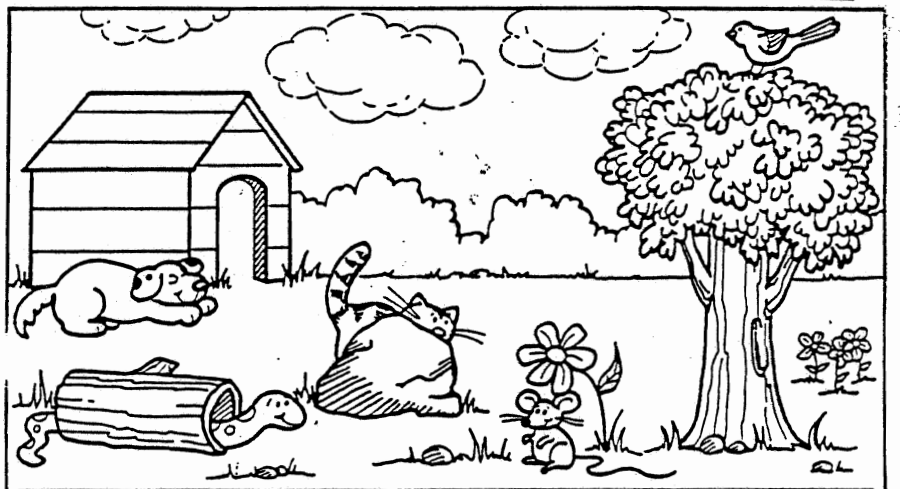
2) 2
   - 2

Appendix F

Set Work Examples

Where Are They Hiding?

- Find these animals in the picture: mouse, dog, snake, cat, bird.
- Color the animals.
- Answer the questions.



WORD BANK flower rock log tree doghouse

The cat is behind the _____.

The mouse is under the _____.

The dog is beside the _____.

The snake is in the _____.

The bird is on the _____.

Appendix F

Set Work Examples

READ THE PARAGRAPH AND ANSWER THE QUESTIONS.

ON SATURDAY, JERRY AND BILL WENT TO THE BASEBALL GAME. NEW YORK AND CLEVELAND WERE PLAYING. NEW YORK WON 6 TO 3.

	YES	NO
1. DID JERRY AND BILL GO TO A FOOTBALL GAME?		
2. DID THEY GO TO THE GAME ON SATURDAY?		
3. WERE NEW YORK AND CLEVELAND PLAYING?		
4. DID CLEVELAND WIN?		
5. WAS THE SCORE 6 TO 3?		

---

1. THE TWO PEOPLE IN THE STORY WERE

   A. JOHN AND DAVID B. JERRY AND BILL C. JOE AND BUD

2. THEY WENT TO THE GAME ON

   A. SATURDAY B. MONDAY C. SUNDAY

3. THE GAME BEING PLAYED WAS

   A. FOOTBALL B. BASEBALL C. HOCKEY

4. THE TEAMS PLAYING WERE

   A. LOS ANGELES AND KANSAS B. PHILADELPHIA AND PITTSBURG

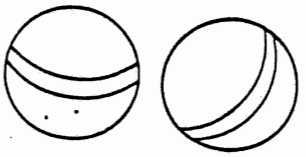
   C. NEW YORK AND CLEVELAND

5. THE GAME WAS WON BY

   A. CLEVELAND B. NEW YORK C. PITTSBURG

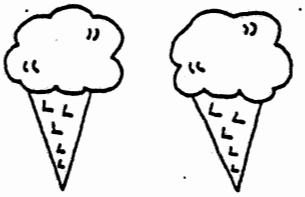
Appendix F

Set Work Examples

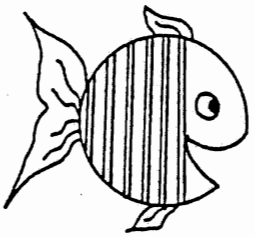


How many balls?

How many boats?



How many ice cream cones?

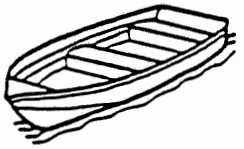


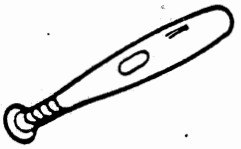
How many fish?

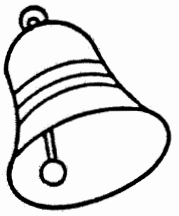
How many leaves?

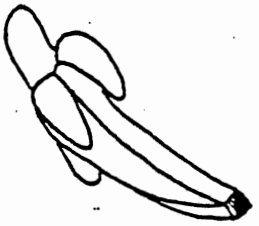
Appendix F

Set Work Examples









ball bat bell banana boat

WORD POOL

Appendix G

Data Collection Cards

Date:

Facilitator:

KEY: AR: appropriate response
IR: inappropriate response
NR: no response

ACTIVITY	AR	IR	NR

Appendix H

Transcript Phase I

DATE	FACILITATOR	ACTIVITY	RESPONSE

Appendix I

Transcript of Phases II, III, and IV

DATE	FACILITATORS	ACTIVITY	RESPONSE

Appendix J

Cumulative Data Collection Sheet